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(54) PRODUCTION OF ULTRA-FINE ZINC OXIDE POWDER HAVING EXCELLENT DISPERSIBILITY

(57)Abstract:

PURPOSE: To obtain ultra-fine zinc oxide powder having excellent dispersibility without passing through a calcination process by dropping an alkali aqueous solution to the aqueous solution of a zinc salt and preparing the precipitates of zinc oxide having a prescribed average particle size under a specified condition.

CONSTITUTION: The aqueous solution of a zinc salt is dropped in an alkali aqueous solution at a temperature of $\geq 60^{\circ}\text{C}$, and the precipitates of zinc oxide are produced at a final pH of ≥ 9 to provide ultra-fine zinc oxide powder having an average particle size of $0.02\text{-}0.05\mu\text{m}$. In the production method, the aqueous solution of the zinc salt is dropped in the alkali aqueous solution and the reaction temperature is preferably maintained at a temperature of $\geq 60^{\circ}\text{C}$ for $\geq 30\text{min}$. The utilization of the ultra-fine particle zinc oxide powder permits to prepare coating films having high transparency in a visible region and an excellent UV ray shielding effect. The zinc oxide powder can be further utilized for anti-suntanned cosmetics and UV ray-shielding protecting films for automobiles, furnitures, optical materials, etc. The utilization of the dispersion of the powder allows to readily prepare coatings or pastes.

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